IN THE CLAIMS

1. (Currently Amended) A wireless communication system comprising:

a transmitter including an orthogonal encoder for converting serially input binary signals to parallel binary signals and orthogonally encoding the parallel binary signals, a first multiplier for multiplying the orthogonally encoded binary signals by an intrinsic spreading code to spread the orthogonally encoded binary signals, and an OFDM (Orthogonal Frequency Division Multiplexing) modulator for OFDM-modulating the spread signals; and

a receiver including an OFDM demodulator for demodulating the OFDM-modulated signals, and a maximum likelihood detector for performing a maximum likelihood detection of the demodulated spread signals,

the maximum likelihood detector grouping the OFDM-demodulated signals into a predetermined number of blocks, and ~~to~~ performing ~~the~~ maximum likelihood detection for each of the blocks to get a predetermined number of maximum likelihood detection values, and ~~using the grouped maximum likelihood detection values to~~ performing ~~a whole~~ maximum likelihood detection for all of the predetermined number of maximum likelihood detection values.

2. (Original) The wireless communication system as claimed in claim 1, wherein the transmitter further includes:

a first serial-to-parallel converter for serial-to-parallel converting the signals spread with the intrinsic spreading code; and

an interleaver for interleaving the serial-to-parallel converted signals and sending the interleaved signals to the OFDM modulator,

the receiver further including:

a deinterleaver for deinterleaving the OFDM-demodulated signals; and

a first parallel-to-serial converter for parallel-to-serial converting the deinterleaved signals and sending the parallel-to-serial converted signals to the maximum likelihood detector.

3. (Currently Amended) The wireless communication system as claimed in claim 1, wherein the maximum likelihood detector comprises:

a second multiplier for multiplying the OFDM-demodulated signals by the intrinsic spreading code;

a grouping section for grouping the multiplied signals into the predetermined number of blocks;

a grouping maximum approximation detector for performing a maximum likelihood detection for each of the ~~grouped~~ blocks to get the predetermined number of maximum likelihood detection values;

an integrated maximum approximation detector for performing ~~a whole~~ maximum likelihood detection for the predetermined number of maximum likelihood detection values~~based on the grouped maximum approximation values~~;

an orthogonal despreader for orthogonally despreading a sequence having a maximum approximation value to output parallel signals; and

a second parallel-to-serial converter for converting the parallel output signals to serial signals.

4. (Original) The wireless communication system as claimed in claim 3, wherein the grouping section groups an interval length of the intrinsic spreading code into blocks having a bit interval length of the orthogonal code.

5. (Currently Amended) A wireless communication method comprising:

orthogonally encoding serial binary signals;

multiplying the orthogonally encoded serial binary signals by an intrinsic spreading code to spread the orthogonally encoded binary signals;

OFDM-modulating the spread signals;

OFDM-demodulating the OFDM-modulated signals:

grouping the demodulated signals into a predetermined number of blocks;

performing maximum likelihood detection for each of the predetermined number of blocks to get a predetermined number of maximum likelihood detection values; and

performing maximum likelihood detection for all of the predetermined number of ~~to perform a maximum likelihood detection; and~~

~~using the grouped maximum likelihood detection values to perform a whole grouping~~ maximum likelihood detection values.

6. (Previously Presented) The wireless communication method as claimed in claim 5, further comprising:

serial-to-parallel converting the signals spread with the intrinsic spreading code, and

interleaving the serial-to-parallel converted signals; and

deinterleaving the OFDM-demodulated signals; and parallel-to-serial converting the deinterleaved signals and sending the parallel-to-serial converted signals to a maximum likelihood detector.

7. (Currently Amended) The wireless communication method as claimed in claim 6, wherein said grouping the demodulated signals further comprises

multiplying the OFDM-demodulated signals by the intrinsic spreading code,

grouping the multiplied signals into the predetermined number of blocks. ~~and~~

~~performing a maximum likelihood detection of the grouped blocks; and~~

~~wherein said using the grouped maximum likelihood detection values further comprises~~

~~integrating the grouped maximum approximation values to perform a whole maximum likelihood detection,~~

~~orthogonally despreading sequences having a maximum approximation value and outputting the orthogonally despread sequences in parallel, and~~

~~converting the parallel output signals to serial signals.~~

8. (Currently Amended) The wireless communication method as claimed in claim 7, wherein the grouping comprises grouping an interval length of the intrinsic spreading code into the blocks having a bit interval length of the orthogonal code.